

## REMARKS/ARGUMENTS

Prior to the amendments presented herewith, claims 1-49 were pending. Claims 1, 28, 29 and 32-38 are being amended. Claims 2-6, 17, 18, 21-27, 30, 31, 39-47 and 49 are being cancelled. Accordingly, after the present amendments have been entered, claims 1, 7-16, 19, 20, 28, 29, 32-38 and 48 will be pending.

### 1. Information Disclosure Statements

Applicants thank the Examiner for acknowledging the Information Disclosure Statements filed on 9/26/2006, 9/7/2006, 8/16/2006, 4/10/2006, 9/14/2005, 8/2/2005 and 2/23/2005.

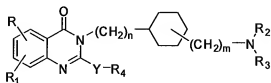
Applicants note that two other Information Disclosure Statements were filed 1/23/2007 and 1/8/2007, after the mailing date of the present Office Action.

### 2. Election/Restriction

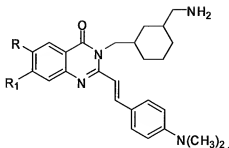
Applicants are grateful for the Examiner's acknowledgment of the election of Group XIII (wherein  $J=K=L=M=CR_{12}$  and  $Q=CO, CS$  or  $C=NR_{19}$ ) and the indication that all of the claims have been searched. Claims 33, 34 and 36 are being amended to delete unelected subject matter.

### 3. Claim Rejections Under 35 USC §102

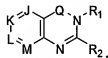
Claims 1-5, 11, 12 and 16-19 are rejected as being anticipated by WO 01/23364 (Barnickel *et al.*). Barnickel *et al.* relates to glycoprotein IbIX antagonists having the general formula:



In particular, Barnickel *et al.* discloses 3-(3-aminomethyl-cyclohexylmethyl)-quinazolin-4-ones of the formula:

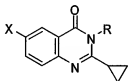


Applicants are amending the claims so that all of the compounds are of the formula:



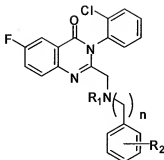
wherein R<sub>1</sub> is -ZR<sub>m</sub> and R<sub>m</sub> is an aryl group, or R<sub>1</sub> is an aryl ring. Since Barnickel *et al.* neither teaches nor suggests the presently claimed compounds, the rejection of claims 1-5, 11, 12 and 16-19 under 35 USC §102 should be withdrawn.

Claims 21-25, 28-33 and 36 are rejected as being anticipated by Somasekhara *et al.* However, Somasekhara *et al.* relates to 2-cyclopropyl-4-(3H)-quinazolinones having the general formula:



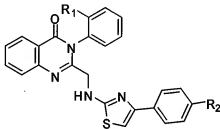
In other words, all of the compounds taught by Somasekhara *et al.* correspond to compounds of Formula XXXVII or XXXIX of claims 1 and 38, respectively, where R<sub>2</sub> is cyclopropyl. In contrast, the pending claims all relate to compounds wherein either (a) R<sub>2</sub> is -UV; U is a linker; and V comprises a primary, secondary or tertiary amine, a heterocycloalkyl comprising a nitrogen ring atom, or a heteroaryl comprising a nitrogen ring atom, and/or (b) R<sub>2</sub> is a substituted or unsubstituted 4-7 membered ring. Since Somasekhara *et al.* neither teaches or suggests the presently claimed compounds, the rejection of claims 21-25, 28-33 and 36 under 35 USC §102 should be withdrawn.

Claims 38-45, 47 and 48 are rejected as being anticipated by Chenard *et al.* Chenard *et al.* relates to compounds having the general formula:



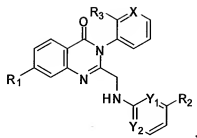
In other words, all of the compounds taught by Chenard *et al.* correspond to compounds of Formulae XXXVII or XXXIX where R<sub>1</sub> is 2-chlorophenyl. In contrast, the pending claims all relate to compounds wherein either (a) R<sub>1</sub> is -ZR<sub>m</sub>, Z is a linker, and R<sub>m</sub> is a substituted or unsubstituted aryl, and/or (b) R<sub>2</sub> is a 4, 5, 6 or 7 membered cycloalkyl or N-containing ring. Since Chenard *et al.* neither teaches or suggests the presently claimed compounds, the rejection of claims 38-45, 47 and 48 under 35 USC §102 should be withdrawn.

Claims 38-41 and 43-48 are rejected as being anticipated by Pattanaik *et al.* Pattanaik *et al.* relates to compounds having the general formula:



In other words, all of the compounds taught by Pattanaik *et al.* correspond to compounds of Formulae XXXVII or XXXIX where R<sub>1</sub> is a substituted or unsubstituted phenyl. In contrast, the pending claims all relate to compounds wherein either (a) R<sub>1</sub> is -ZR<sub>m</sub>, Z is a linker, and R<sub>m</sub> is a substituted or unsubstituted aryl, and/or (b) R<sub>2</sub> is a 4, 5, 6 or 7 membered cycloalkyl or N-containing ring. Since Pattanaik *et al.* neither teaches or suggests the presently claimed compounds, the rejection of claims 38-41 and 43-48 under 35 USC §102 should be withdrawn.

Claims 38-49 are rejected as being anticipated by EP 0900568 (Chenard *et al.*). EP 0900568 relates to compounds having the general formula:



wherein X is CH or N; and Y<sub>1</sub> and Y<sub>2</sub> are each independently N or CR.

In other words, all of the compounds taught by EP 0900568 correspond to compounds of Formula XXXIX where R<sub>1</sub> is a substituted phenyl or substituted pyridinyl. In contrast, the pending claims all relate to compounds wherein either (a) R<sub>1</sub> is -ZR<sub>m</sub>, Z is a linker, and R<sub>m</sub> is a substituted or unsubstituted aryl, and/or (b) R<sub>2</sub> is a 4, 5, 6 or 7 membered cycloalkyl or N-containing ring. Since EP 0900568 neither teaches or suggests the presently claimed compounds, the rejection of claims 38-49 under 35 USC §102 should be withdrawn.

#### 4. Double Patenting

The Examiner has provisionally rejected claims 1-49 under the doctrine of non-statutory obviousness-type double patenting as being unpatentable over claims 1-5, 8, 9, 11-17, 19, 23, 26, 27, 29, 37-39, 51-57, 83, 84, 95, 99 and 111 of copending Application No. 10/809,635. In addition, the Examiner has provisionally rejected claims 1-49 under the doctrine of non-statutory obviousness-type double patenting as being unpatentable over claims 1-33, 36, 42, 43, 55-61, 87, 88, 95, 99, 100 and 103 of copending Application No. 10/809,636. Since the rejections are provisional, Applicants intend to address the rejections when one or more of the applications are otherwise in condition for allowance.

#### 5. Claim Rejections Under 35 USC §112

Claim 1 and claims dependent thereon are rejected as allegedly being indefinite.

With respect to the term “substituted,” the Examiner appears to suggest that the claims are indefinite because the claims do not articulate the particular moieties which facilitate substitution. However, the claim need not list every possible substituent for one of ordinary skill in the art to know what is within the scope of the claim. See *Ex parte* Lani S. Kangas,

Mieczyslaw H. Mazurek, Kurt C. Melancom, Walter R. Romanko, and Audrey A. Sherman, Appeal No. 2002-0250 (BPAI 2002) (copy attached). The claim may be broad in terms of possible R groups, but that alone does not make the claim indefinite. MPEP 2173.04.

In addition, the specification provides guidance in the interpretation of the term “substituted”. Specifically, the specification at paragraph [0098] states:

In general, a non-hydrogen substituent may be any substituent that may be bound to an atom of the given moiety that is specified to be substituted. Examples of substituents include, but are not limited to, aldehyde, alicyclic, aliphatic, alkyl, alkylene, alkylidene, amide, amino, aminoalkyl, aromatic, aryl, bicycloalkyl, bicycloaryl, carbamoyl, carbocyclyl, carboxyl, carbonyl group, cycloalkyl, cycloalkylene, ester, halo, heterobicycloalkyl, heterocycloalkylene, heteroaryl, heterobicycloaryl, heterocycloalkyl, oxo, hydroxy, iminoketone, ketone, nitro, oxaalkyl, and oxoalkyl moieties, each of which may optionally also be substituted or unsubstituted.

Definitions for the term “substituent” can also be found in the literature. For example, Hawley’s Condensed Chemical Dictionary 1056 (13<sup>th</sup> Ed. 1997) defines “substituent” as “[a]n atom or radical that replaces another in a molecule as the result of a reaction” (see attached).

Accordingly, one of ordinary skill in the art would understand the bounds of the term “substituted” as it is used in the present claims. Therefore, the rejection is improper and should be withdrawn. However, solely to advance prosecution of the present invention, claims 1 and 38 are being amended to recite particular substituents for R<sub>m</sub>, U, R<sub>1</sub>, R<sub>2</sub>, R<sub>9</sub> and R<sub>12</sub>. Support for the amendment can be found, for example, in the specification at paragraph [0098].

In addition, claim 1 is rejected because the phrase “U is a moiety providing 1-6 atom separation” is allegedly indefinite. However, those skilled in the art would readily understand that U is a “linker” that joins V to the ring carbon atom of the compound of Formula XXVIII. As such, the atoms in the direct chain of atoms that link V to the ring are the atoms that provide the separation between V and the ring. Furthermore, Applicants provide ample descriptions of what may be used as U. See, e.g., specification at paragraphs [0232]-[0234] and [0240]-[0244]. However, solely for the purpose of advancing prosecution of the present application, claim 1 is being amended to recite particular groups for U. In light of the foregoing, the rejection should be withdrawn.

The Examiner also indicates that use of the transitional phrase “comprising” in the claims is indefinite. The rejection is apparently based on the assertion that the term “comprising” is open-ended. Applicants acknowledge that the term “comprising” is open-ended. However, Applicants are not aware of any provisions in the patent laws that renders the term “comprising” indefinite when used as a transitional phrase in a claim. In fact, the MPEP and patent case law recognize that “comprising” is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.” MPEP §2111.03; *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997). If the Examiner is relying on any particular provisions that render claims with the transitional phrase “comprising” *per se* indefinite, Applicants request that the Examiner bring such information to Applicants’ attention. In the absence of such information, the rejection of the claims is believed to be inappropriate. However, solely for the purpose of advancing prosecution of the present application, claims 1 and 38 are being amended to replace the phrase “[a] compound comprising Formula...” with the phrase “[a] compound of Formula...” To the extent that the Examiner bases the rejection on the phrases “heteroaryl comprising a nitrogen ring atom” and “heterocycloalkyl comprising a nitrogen ring atom,” Applicants believe that the rejection is improper. The specification at paragraph [0079] clearly defines “heteroaryl” as a cyclic aromatic group having 5 or 6 ring atoms, wherein at least one ring atom is a heteroatom. The specification goes on to define “heteroatom” at paragraph [0081] as an atom that is not carbon (such as, for example, nitrogen, oxygen and sulfur). Accordingly, those skilled in the art would readily understand that the phrase “heteroaryl comprising a nitrogen ring atom” refers to cyclic aromatic groups having 5 or 6 ring atoms, wherein at least one ring atom is nitrogen and the other ring atoms are either carbon or a further heteroatom. A similar analysis applies to the phrase “cycloalkyl comprising a nitrogen ring atom” (*see*, specification at paragraphs [0073], [0081] and [0085]). Accordingly, the rejection should be withdrawn.

The claims are also rejected because the phrase “V comprises a basic nitrogen atom that is capable of interacting with a carboxylic acid side chain of an active site residue of a protein” is allegedly indefinite. Applicants respectfully disagree. Applicants suspect that the rejection is based on the fact that the Examiner is unclear whether the ring nitrogen of the species described at paragraph [0240] is capable of interacting with the carboxylic acid. However, those skilled in

the art would readily appreciate that the ring nitrogen atoms of the moieties of paragraph [0240] (including the piperidine) do **not** constitute the basic nitrogen atom required by the claims. Since U requires at least one atom, the ring nitrogen atom of the moieties of paragraph [0240] necessarily must be read as being part of U. Accordingly, the ring nitrogen atom of the moieties cannot constitute the basic nitrogen atom required of V. The fact that the aforementioned ring nitrogens do not provide the necessary basic nitrogen is precisely why moieties of the type specified in paragraph [0241] can be used in connection with the present invention, even though those moieties do not even contain a ring nitrogen. However, solely for the purpose of advancing prosecution of the present application, claim 1 is being amended to recite particular groups for V. Accordingly, the rejection should be withdrawn.

With respect to the term "thio," those skilled in the art would understand that this prefix denotes replacement of an oxygen by a sulfur and, therefore, includes -SR, -S- and =S containing groups. *See, for example*, Pure and Applied Chemistry (1995), 67, 1307-1375 (copy attached). Accordingly, the rejection should be withdrawn.

In light of the foregoing the rejection of claim 1 and claims dependent thereon as being indefinite is believed to be overcome and should be withdrawn.

#### **6. Miscellaneous Claim Amendments**

Claim 1 is also being amended to recite specific groups for Z. Support for the amendment can be found, for example, in the specification at paragraphs [0193] and [0197].

Claims 28, 29 and 32-37 are being amended to depend from claim 1 in accordance with the cancellation of claim 21.

Claims 33, 34 and 36 are being amended to delete unelected subject matter.

**CONCLUSION**

Applicants earnestly believe that they are entitled to a letters patent, and respectfully solicit the Examiner to expedite prosecution of this patent application to issuance. Should the Examiner have any questions, the Examiner is encouraged to telephone the undersigned.

Respectfully submitted,

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